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ABSTRACT

This paper outlines efforts at Miami University (Middletown, Ohio) to bridge the "generation gap" between students who are comfortable using computer technologies and the faculty and staff who are reluctant to use them. Two Instructional Technology Fairs were held on campus (in Springs 1995 and 1996) to show faculty, staff, students, and community what was available in hardware and software on campus. A PowerPoint show featuring pictures that were "captured" from the fair was presented at the opening Faculty Senate meeting in the fall of 1995. Following, was a series of PowerPoint workshop presentations for any interested faculty and staff. The workshop series consisted of three parts focusing on creating a PowerPoint presentation; incorporating sound and pictures; and incorporating video. These workshops were then expanded to include students. One of the best ways to keep student enthusiasm for technology high is to hire knowledgeable students as student technicians in the computer center. This allows for a lot of interaction between these students, faculty, and staff. The University has a grant program called the Learning Technologies Enrichment Program whose purpose is to provide funding for equipment that broaden the application and integration of technology in the curriculum. The Summer Institute of Learning Technologies was targeted to novice faculty. Faculty and staff use of multimedia was found to increase by over 50% over the last 2 years, due to these efforts. (AEF)

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Bridging the Multimedia Generation Gap

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The Problem

Miami University in Middletown Ohio is one of two regional campuses of Miami University, a state institution serving approximately 20,000 students. The regional campuses serve a large number of nontraditional students in two year degree programs and the first two years of the four year degree programs. Our particular campus serves approximately 2300 non-resident students who commute from as far north as Dayton, Ohio and as far south as Cincinnati, Ohio. These students come to our campus with a wide variety of educational needs and goals. Part of the new educational needs of today's student is to be computer literate. They need to be competent with standard computer tools such as spreadsheets, word processing, and data bases. Employers are routinely expecting this to be the case. Our students also have severe time and resource limitations based on family and geographic constraints. One way to alleviate some of these constraints is to employ technology to give the student more control over the time and location of some aspects of their educational experience. This can be achieved via computer based lessons and tutorials, and the use of E-mail and Internet services. It is a component of our mission to meet the educational needs of the region and increase the accessibility and success of our students. In order to satisfy this mission, faculty need to teach and utilize technology.

Much of the business world has surpassed the educational world in using computer technology efficiently to improve communications and productivity. We recognized this and our students' changing needs and sought to increase the use of computer technology in our classrooms. This led to examining why this was not naturally occurring. What we discovered was a "generation gap" of sorts between the younger students and the nontraditional students and faculty. Our faculty was reluctant to employ multimedia and computer technology and clung to the overhead projector, blackboard, and video tape. This reluctance was emphasized by their own hesitation in using tools such as E-mail and Windows for their own work. Yet some of our students were at home using and writing Visual Basic programs, multimedia, spreadsheets, and computer based tutorials. This paper outlines our ongoing efforts to bridge this gap and encourage our faculty, staff, and students of varying ages to engage in using computer technology to facilitate the educational process.

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Initial Attempts to Solve the Problem

Through speaking with colleagues and personal observation, we discovered that the available computer resources were not being used effectively by our faculty and staff. Windows based programs were not being used. Many faculty and staff were not using E-mail to communicate. We decided that it was merely a lack of knowledge problem and so we offered several workshops on E-mail, Word, and Excel. "Bring the knowledge to the people and they will embrace it", was our battle cry. How wrong we were. The workshops were poorly attended. Those who attended seemed pleased with the information received but most did not continue to use it after the workshop.

That led to asking ourselves a question, "why were we so enthusiastic about all this new technology and our colleagues were less than enthused?" The answer came from looking at how we were exposed to and learned about multimedia and technology. We looked into our classrooms and our computer center. What we saw were students who were proficient in using Windows, E-mail, and many other computer technologies. There was a font of knowledge just waiting to be tapped. The only reason one of us started using Windows was because a student demonstrated how "easy" it was. There is something about a student knowing a little more than the professor that is very motivating. But rather than feeling "dumb" or embarrassed, we started soaking in all the students' information we could. Their excitement increased our excitement. It also increased their self esteem to be "teaching the teacher." We began noticing all the talented young computer users on our campus. Now the task became uniting the two fronts to accomplish our goal.

The First Instructional Technology Fair

In the spring of 1995 we held the first Instructional Technology Fair on campus. The purpose of the fair was to show faculty, staff, students, and the community what was available in hardware and software on our campus. We first contacted faculty who had used some multimedia in the classroom and asked them to display what they had done and be present to answer questions. This included the Nursing Department which had been using interactive video and automated medical devices for some time. One professor in Business Technology demonstrated a tutorial created in Authorware. Another History instructor showed off a CD, "Who Built America", she used in class to teach American History. This was a start but hardly enough for a fair. We both caught the spirit and developed several displays in PowerPoint. But this was still not enough. Again we turned to the students. We introduced the idea to several particularly knowledgeable students. That was all it took. They went to work and developed what turned out to be the highlights of the fair. One student developed an interactive tour of our campus using Authorware. Another developed a Web page that made our other campuses so jealous they developed theirs almost immediately. In the end we had twelve different contributors with two or three projects each. We decided to fill in with various booths demonstrating CU-SeeMe, PowerPoint, Netscape, and video capture.

Now we had the makings of a fair. But how do we lead the horse to water? Make it so he trips over it! We put it in the lobby of our main building right near the Information Desk and the cafeteria. You could not possibly miss it. We also combined it with a Faculty Senate meeting and a visit by our new Provost. We made a brochure to publicize the two day event and drafted volunteers. The press was invited. We tried to generate as much anticipation as we could. It worked! The event was a great success. Faculty, staff, and students all found that they were not really aware of what was available

for their use. People were amazed at what the students were capable of doing. The press ran a nice article in the local paper. Teachers from some of the local high schools visited and stated that they got some good ideas. We succeeded in our goal of generating some excitement and enthusiasm.

Capitalizing on the Excitement

In the fall of the following year, a PowerPoint show featuring pictures that were "captured" from the fair was presented at the opening Faculty Senate meeting. One sure way to capture a colleague's attention is to put their picture up for all to see, (especially if they did not know you took it). The presentation also outlined workshops and events for the coming school year.

We then presented a series of PowerPoint workshops for any interested faculty and staff. This time the workshops were well attended. We developed a three part series in order to attract the beginners as well as the more advanced. Three different faculty members were in charge of each part while the other two were helpers. This helped to split the preparation burden up a bit. In addition the students who were most productive at the fair were enlisted to assist at the workshops. This was extremely helpful in breaking down some of the intimidation barriers that both students and faculty face when their roles are reversed.

The series ran as follows:

Part I - Creating a PowerPoint Presentation:
This included the basics of PowerPoint and what it was capable of doing. Everyone was stepped through creating their own presentation beginning with the Presentation Wizard.

Part II - Incorporating Sound and Pictures into PowerPoint:
This segment included scanning pictures and recording sound from a microphone or CD and then incorporating this into a document. A script was written to follow and the participants then inserted the picture or sound of their choosing.

Part III - Incorporating Video into PowerPoint:
In this segment participants learned how to capture video from their own video tape. They were also instructed on the use of basic video editing software. Then they incorporated them into a 1 or 2 slide presentation.

The workshops ran about 1 1/2 to 2 hours each and were spread out over the fall semester. Some participants ran through the entire series. Some who were reluctant to get too complicated stopped after the first one while others who were not beginners chose to begin with part 2 or 3.

The keys to success:

-splitting up the planning among three different people
-involving students as helpers
-having a low student to teacher ratio (it was about 5 to 1)
-having workshops at different knowledge levels that ran consecutively

Interestingly enough we also noted that staff took more advantage of the opportunities than faculty. Our admissions and advising staff especially seemed interested.

Keeping the Students Enthusiastic

One problem our campus faces being primarily a two year feeder for the Oxford Campus is that our student turnover is rapid. Each year we gain some very talented students who are capable computer users, but we only have at most two years to tap into their knowledge base. One of the best ways is by searching them out and hiring them as student technicians in the computer center and allowing them to develop their areas of interest. This allows for lots of interaction between these students, faculty, and staff. But it is important to foster more students to replace those that are leaving and to keep their level of interest and enthusiasm high. We decided to resurrect the computer club. We found that a charter existed but that the group had been defunct for some time. We gathered our small flock of students, got them interested, and started publicizing. The initial response was good. Fifteen students were at the first meeting and officers were elected. For about two months things seemed to be going well but then attendance at the meetings began to wane. This happened for two reasons. One was that a small number of already overburdened students were doing all the work. Secondly the topics chosen for the first two meetings were too technical for the general student population and frightened many of the beginners away. We have not said die yet. We plan to try and resurrect the group next fall with some changes.

Reaching Across Disciplines

Another problem that we have identified is the lack of proper equipment and its availability to faculty for creating educational technology. Our University has a grant program called the Learning Technologies Enrichment Program (LTEP). Its purpose is to provide funding for equipment that will enhance the University's learning environment through broadening the application and integration of technology into the curriculum. Our project involved the purchase of a multimedia work station placed conveniently for use by various Nursing, Math, Physics, Education, and Chemistry instructors who made a commitment to produce a multimedia project within the next year. The project includes some instruction on the use of the equipment and various software and ongoing support. The faculty involved are relative novices at multimedia production and use. We have found that the faculty are more comfortable working with others of their same level. All the faculty have offices on the same floor as well which adds to the camaraderie. There are always benefits to sharing across different disciplines. Faculty have shared ideas for the use of multimedia that then sparks an idea in another field. For example the chemistry instructor suggested making computer models of molecules that can be turned at different angles to show a student how the same molecule can look vastly different if turned. This inspired Janet to explore a three dimensional ray tracing engine (POVRay) that she now uses to make three dimensional models that students otherwise had trouble envisioning.

The Second Instructional Technology Fair

In the spring of 1996 we held the second Instructional Technology Fair. This year we included a contest and invited our Associate Provost for Computing and Director of Faculty Development from the Oxford Campus, and the vice president of a local bank to be the judges. We had several categories including novice faculty, novice student, faculty, student and best of show. Vendors donated prizes as well as the campus providing gift certificates at the campus bookstore. Brochures were printed and distributed around to the local schools. We invited the Provost and press again and

added punch and cookies to the list of offerings. We also expanded the amount of space but stayed in the lobby area to increase the traffic flow through the fair.

The entries were displayed grouped by type of project. For example, a continuous sampling of the PowerPoint projects were displayed on a projector while the individual projects could be viewed on an adjacent desktop. We also had a large number of World Wide Web pages. These were set up on a desktop and could be viewed from a master page. Windows 95 was displayed along with Netscape 95. We also projected the video capture booth on to a screen and combined that with morphing the images we captured. That drew lots of attention. The highlight of this fair was the faculty DOOM game that a freshman student altered to include the faces of several faculty members and the Executive Director of the campus.

The participation rate was higher for this fair. We had 38 projects submitted by 26 different individuals. Student participation was especially high. In fact we got a few students that we did not expect who did some neat projects. We also got some novice faculty who did some interesting PowerPoint projects. Unfortunately participation was weak from some the experienced faculty. One problem was that the call for projects was done in the fall but not again until late winter. Attendance at the fair was low on the second day of the two day event partially due to outstanding weather conditions. Next year we plan to include more hands on booths which seem to encourage experimentation and participation. The participation and expertise of the students seems to drive the faculty to try more new things.

Continuing the Mission

In the past, we had offered faculty/staff workshops on various software packages taught by faculty volunteers. The workshops covered E-mail, word processing, spreadsheets and databases. We would offer one or two workshops in each area every semester. These workshops were poorly attended (four to six participants per session).

We discovered that we had many students who had never touched a computer who were being expected to use a word processor to write a paper and E-mail to communicate with their professor and classmates. Faculty were assuming that the students would learn these on their own. The students would show up at the computer center and expect an individual tutoring session which overburdened the computer center staff. This spring we expanded our workshop offerings and opened them up to students. We developed tutorials and then staffed the workshops with volunteer student, faculty, and staff . We offered four sessions on each topic and scheduled them on different days at varying times, morning, afternoon, and evening. Enrollment increased dramatically to 15 - 20 participants per session. Many students who were not required to use theses packages also attended the workshops.

Summer Institute of Learning Technologies

This summer we are organizing the first Summer Institute of Learning Technologies. This will be a week long intensive workshop targeting the novice faculty. The workshop will be four hours each morning. Topics will include E-mail, using the World Wide Web for research, and Web page development. After teaching these programs to each participant, the participant will be expected to

modify an existing course syllabus to include the new technology. They will be guided by faculty who are already using these technologies successfully. The week will be ended by a keynote address by a prominent Professor in the field. Faculty will be given an honorarium for their participation. We hope the small class and personal attention will give faculty a "safe" environment in which to learn.

Conclusions

Our efforts have increased the use of technology among the faculty and staff of our institution. Approximately 17% of our faculty are aggressively using some form of technology with their students. These applications include:

- communications using E-mail and newsgroups
- spreadsheets and data analysis packages
- research with World Wide Web
- distribution of course materials through Netscape
- class presentations using PowerPoint
- computer based tutorials
- interactive video discs

Faculty and staff use of multimedia has increased by over 50% over the last two years. Faculty and students are beginning to speak the same language. But there is still work to be done.

Problems still remain including:

- lack of high level computers for faculty (greater than 386)
- lack of display capabilities such as projectors
- lack of time for education and participation
- lack of mediated classrooms

We have targeted some things that have worked very well including:

- involvement of knowledgeable and patient students
- series based educational segments over specific software (see below)
- allowing the students to show off some of their expertise
- exposing the faculty to new technology in an informal setting
- requiring faculty committment prior to participation in workshops and grants

Some of the software that we have had success with include:

- PowerPoint
- Authorware
- Netscape
- Visual Basic

Our main focus has been how to use the tools. In the future it will be important to show faculty and staff not only how these technologies work but how they can be effectively incorporated into the curriculum to enhance student learning. Many of our young students are entering college highly computer literate. All students entering the work world are expected to be computer literate. Our goal with these programs is to bridge the gaps that remain.